

Fig. 1A

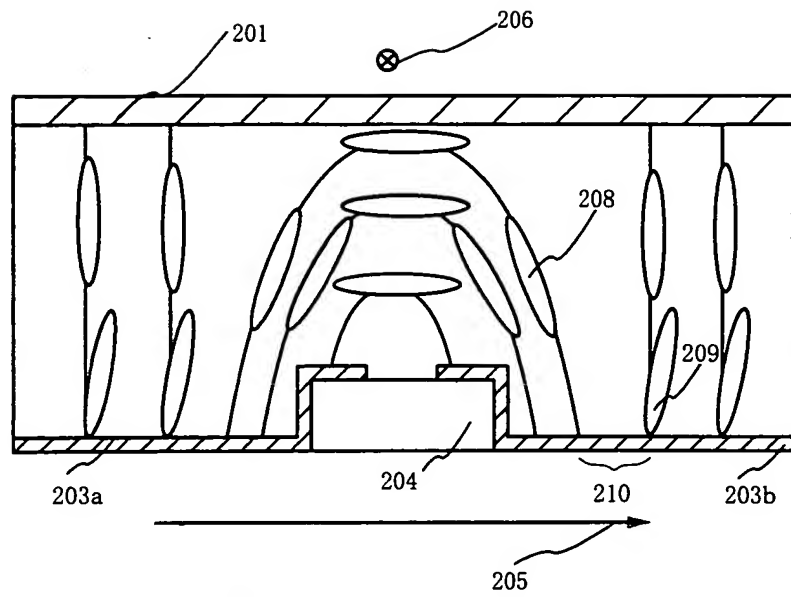


Fig. 1B

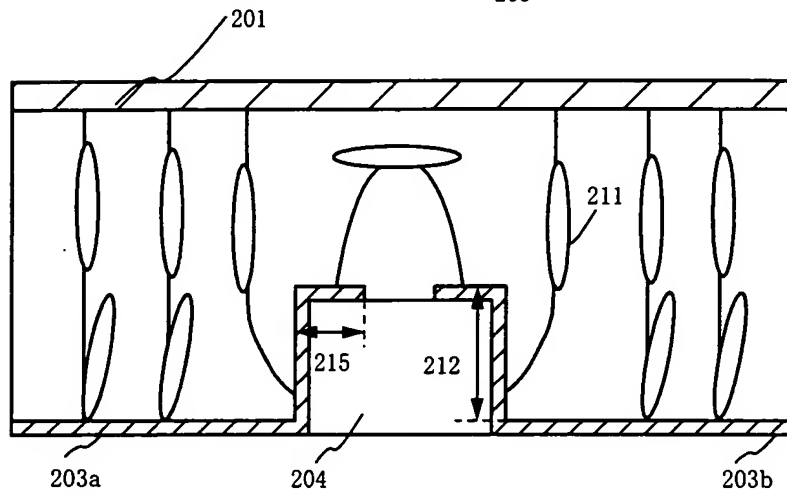
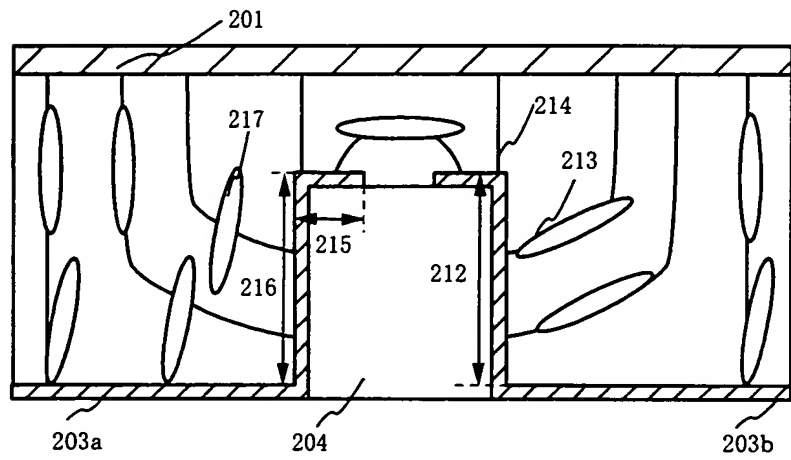
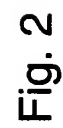


Fig. 1C





**Fig. 2**

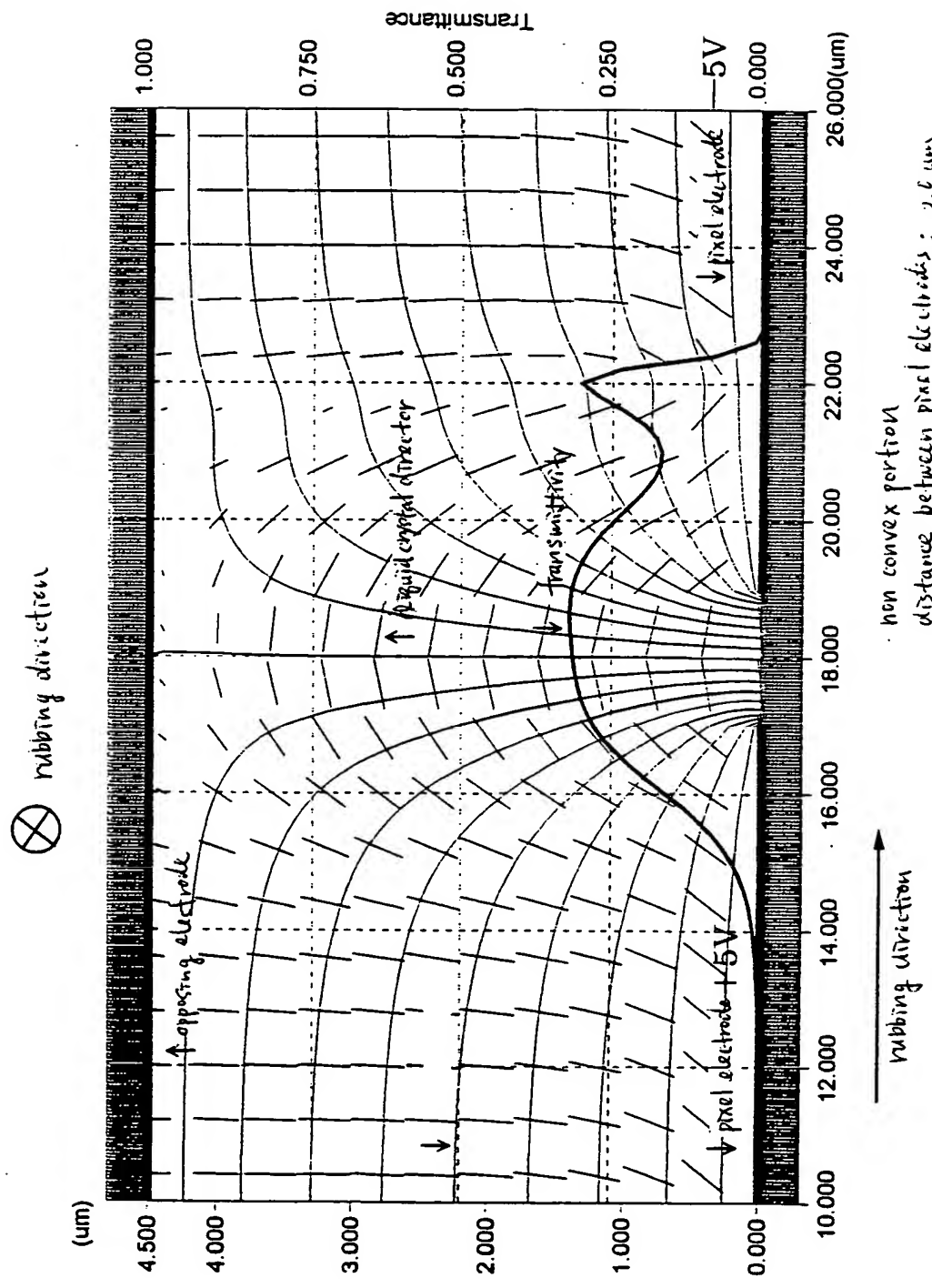


Fig. 3

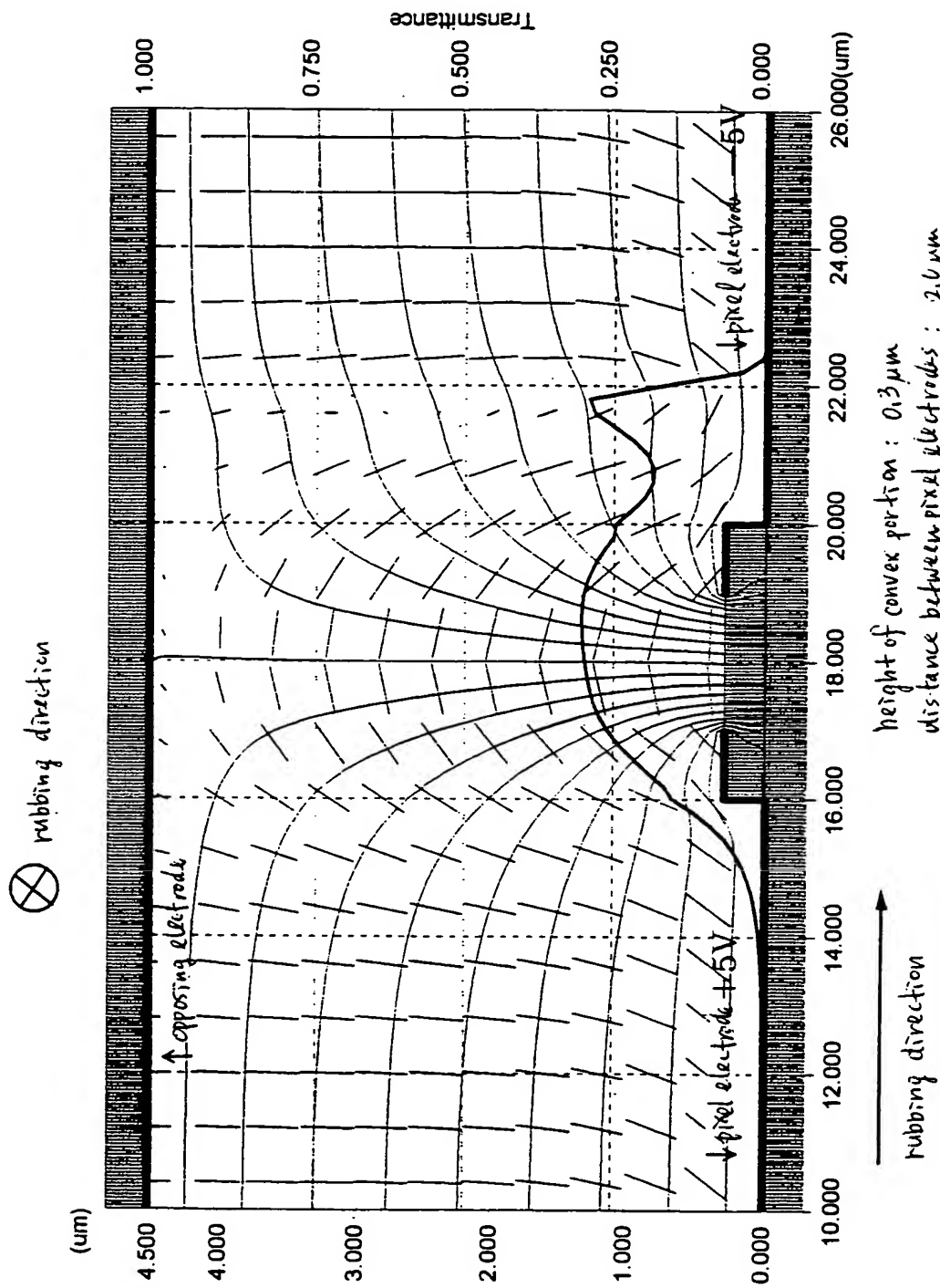


Fig. 4

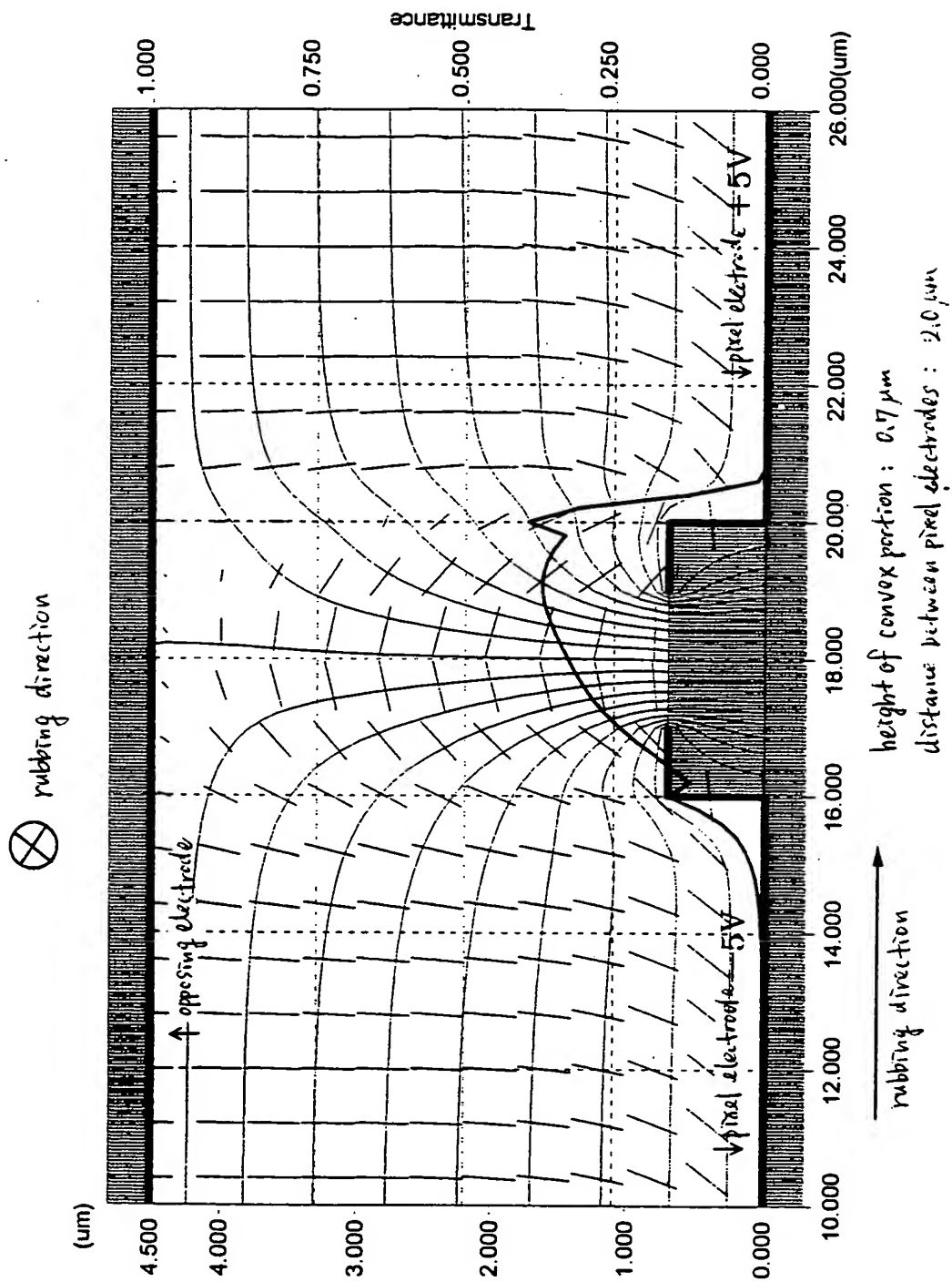


Fig. 5

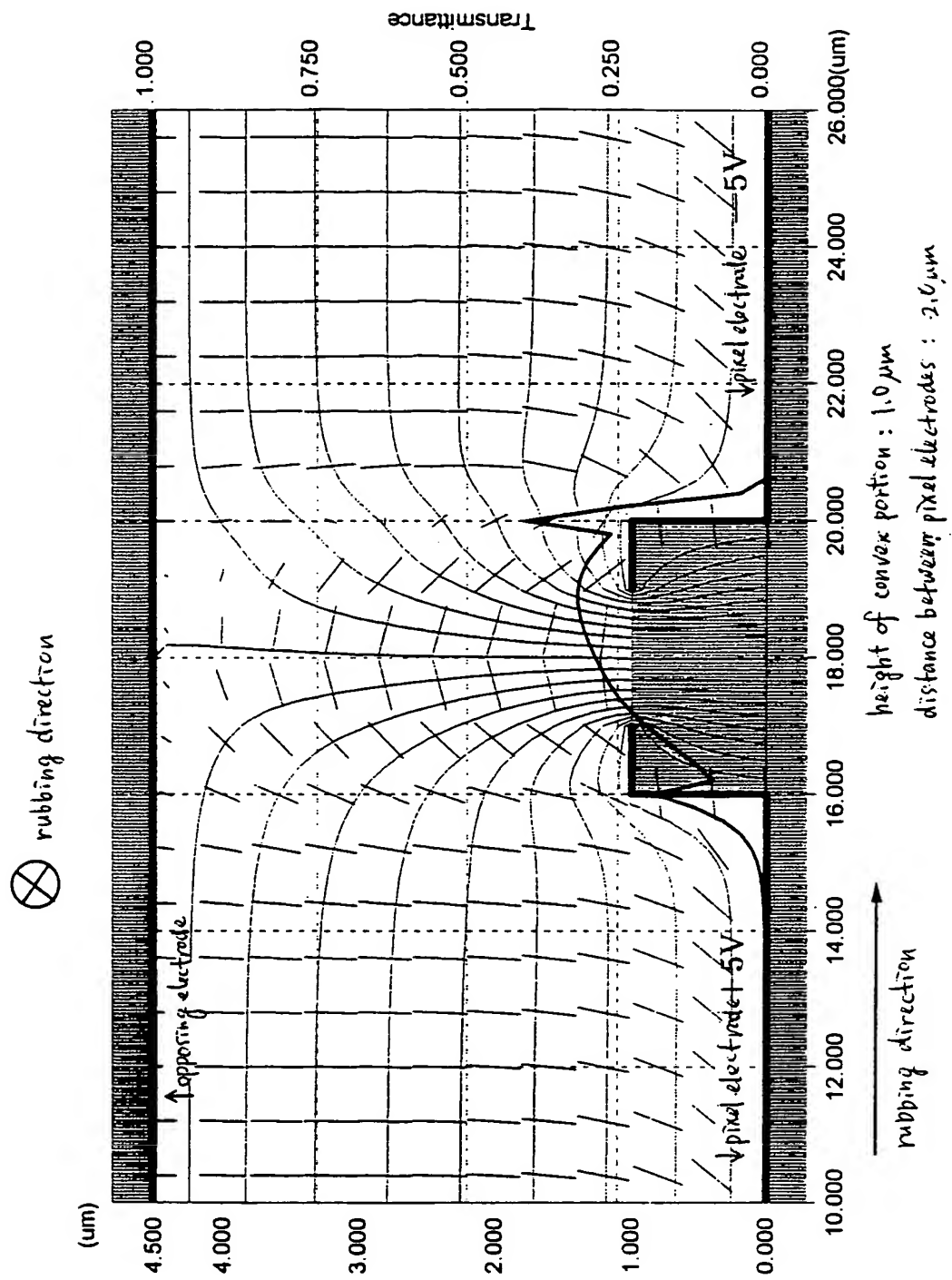


Fig. 6

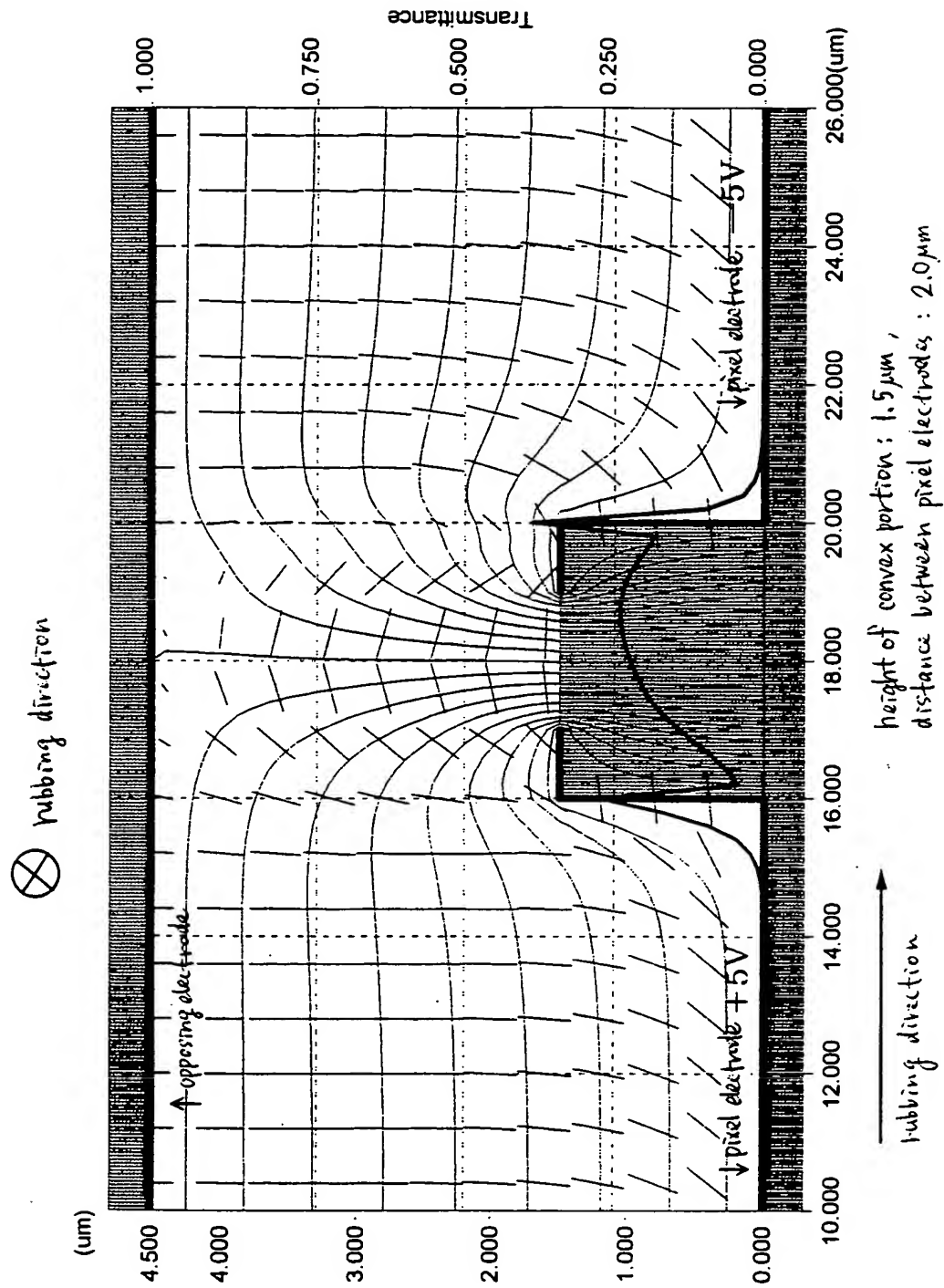
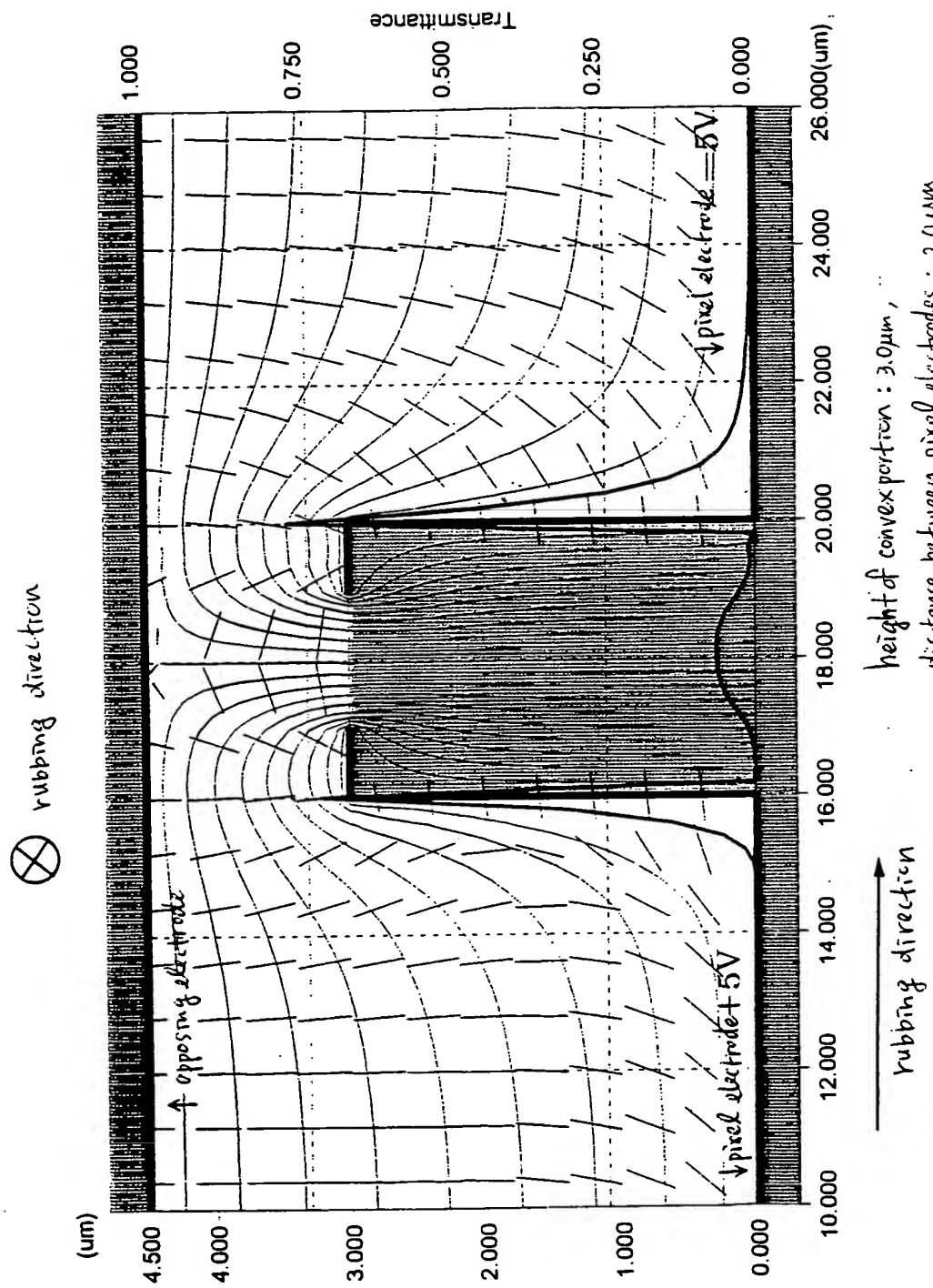


Fig. 7

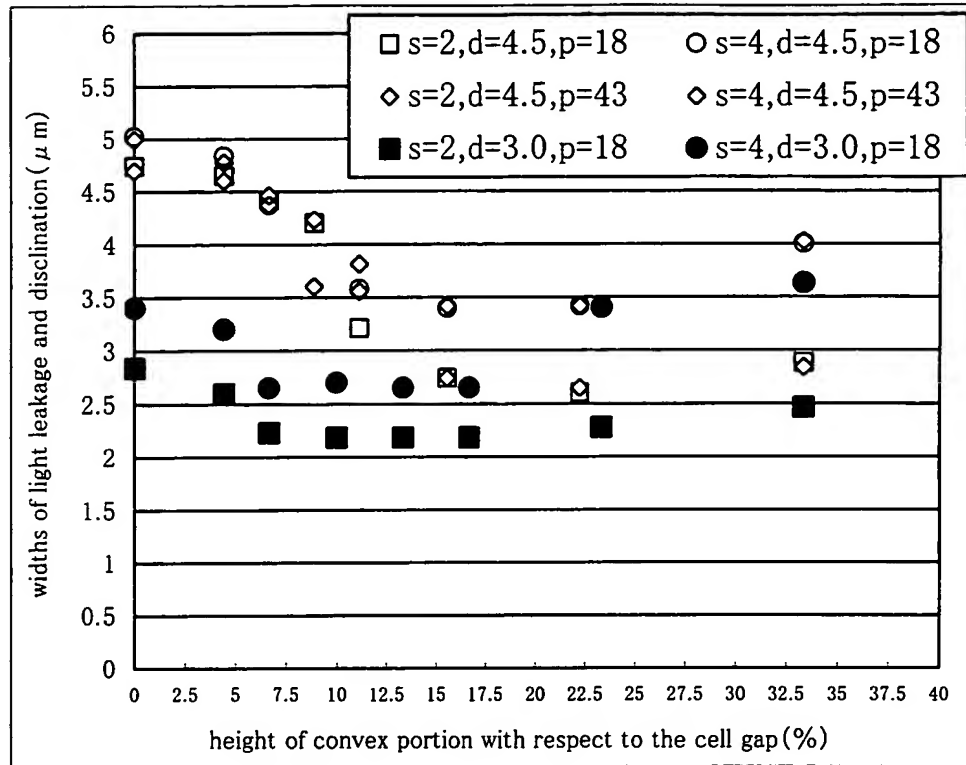


height of convex portion : 3.0 μm ,  
 distance between pixel electrodes : 2.0 μm

Fig. 8



Fig. 9



$d$ : cell gap ( $\mu\text{m}$ )

$s$ : distance between pixel electrodes ( $\mu\text{m}$ )

$p$ : pixel pitch ( $\mu\text{m}$ )

relationship between widths of light leakage and disclination ( $x$ )  
and height of convex portion ( $h$ )

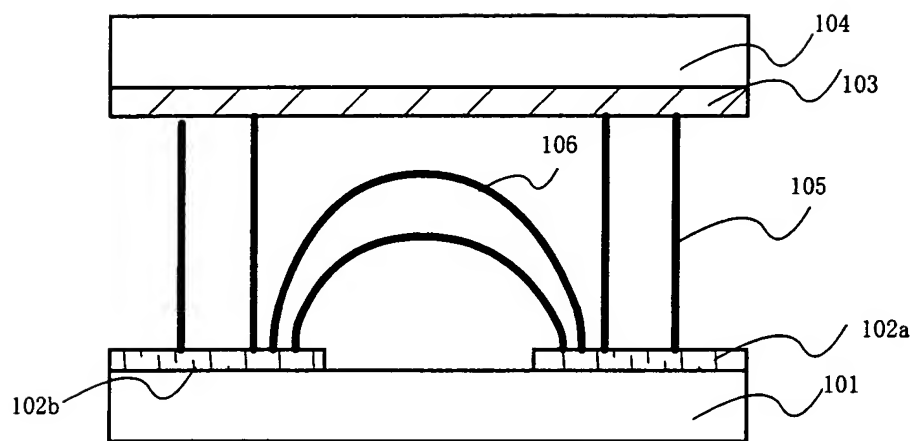


Fig. 10

⊗ rubbing direction

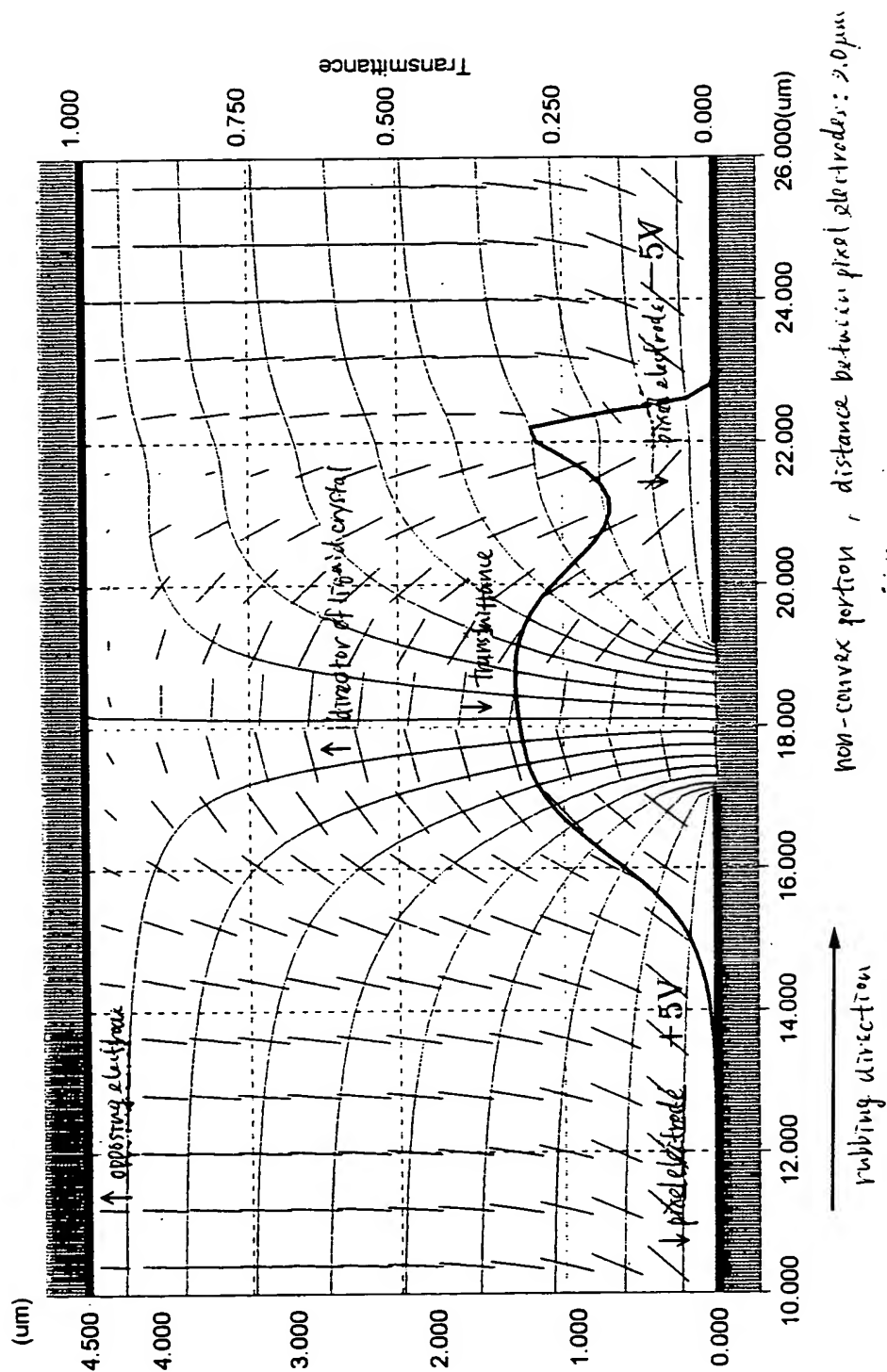
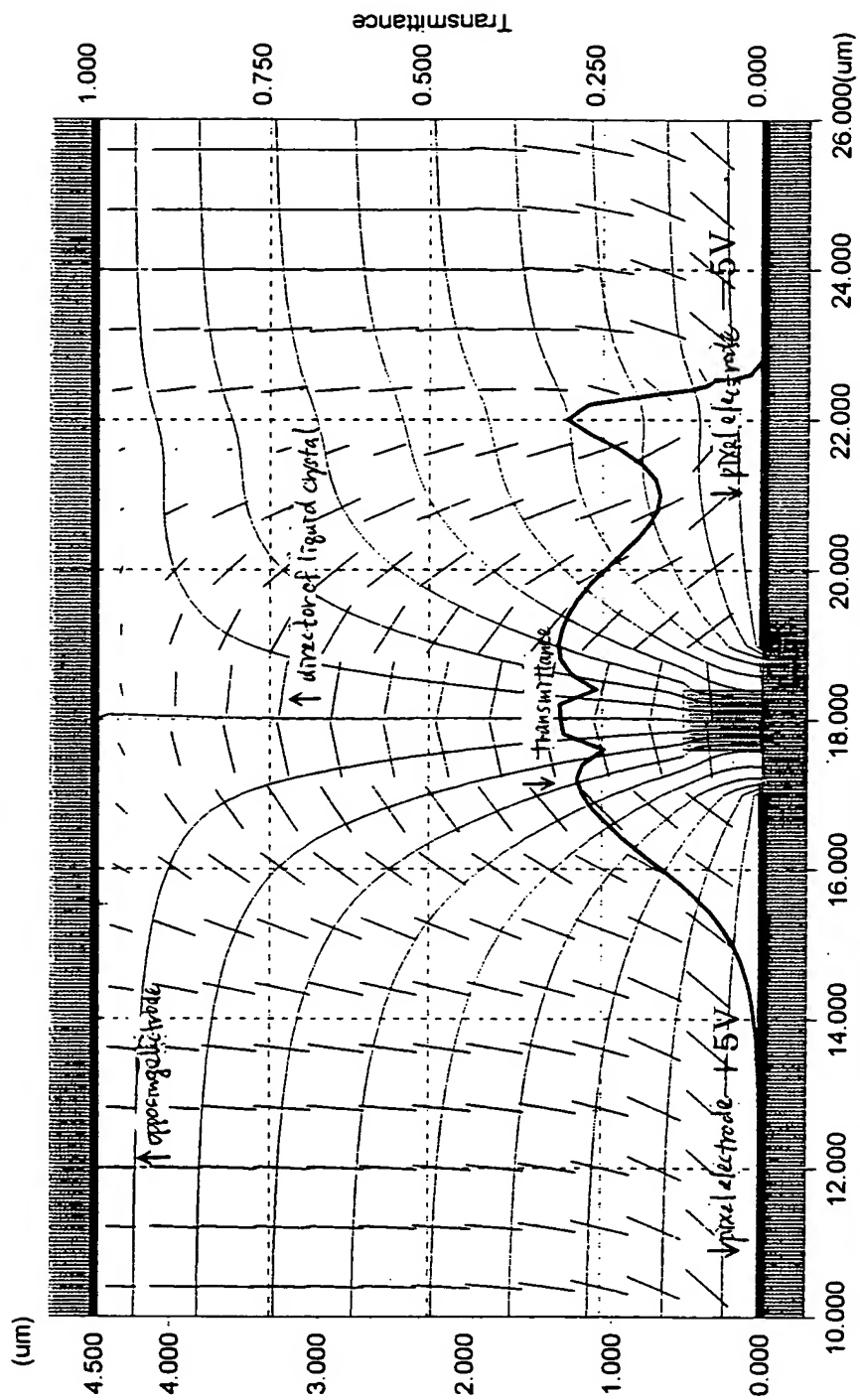


Fig. 11

⊗ rubbing direction



height of convex portion: 0.5um, distance between pixel electrodes: 2.0um  
distance between edges of convex portion and edge of pixel electrode: 0.5um

Fig. 12

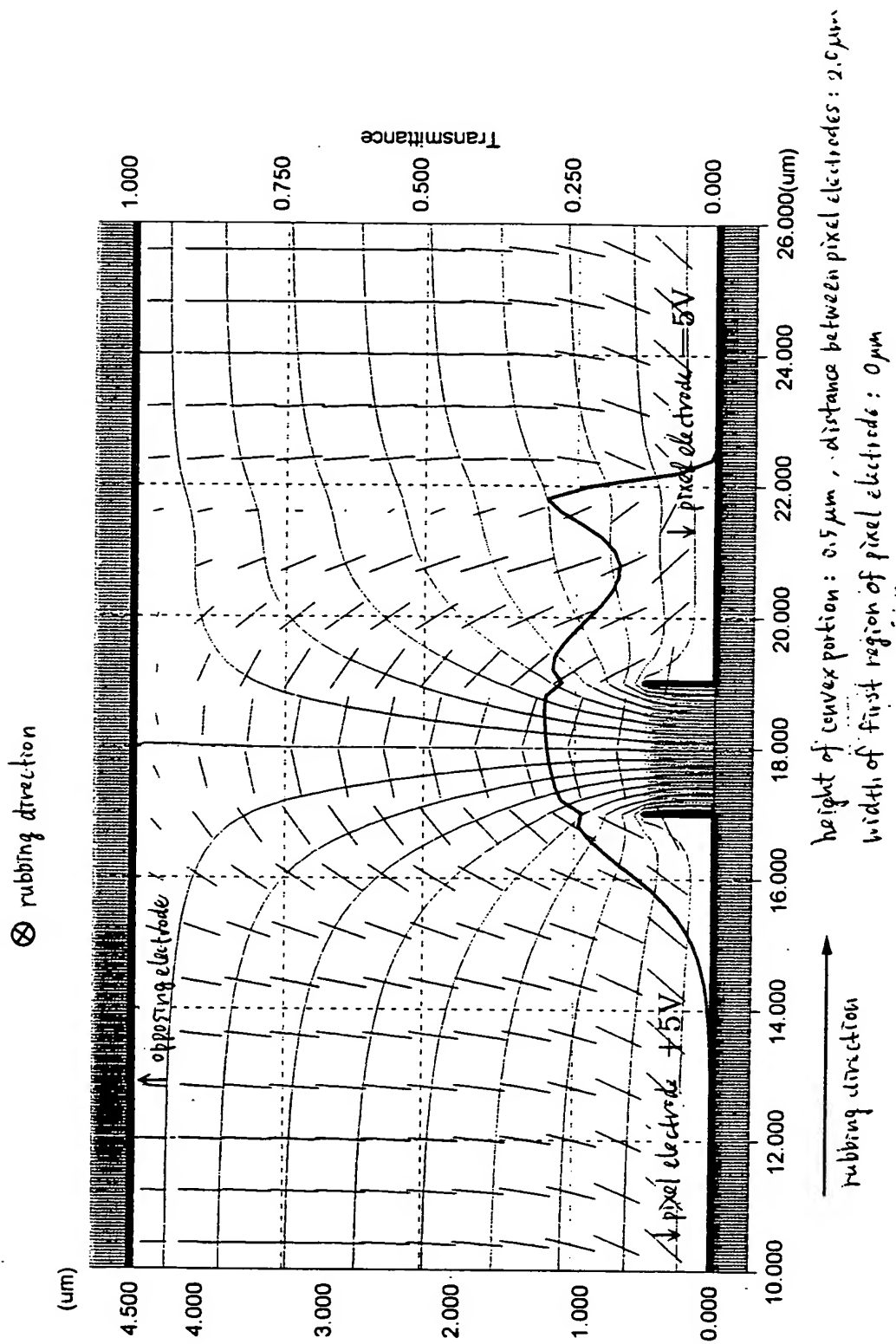


Fig. 13

⊗ rubbing direction

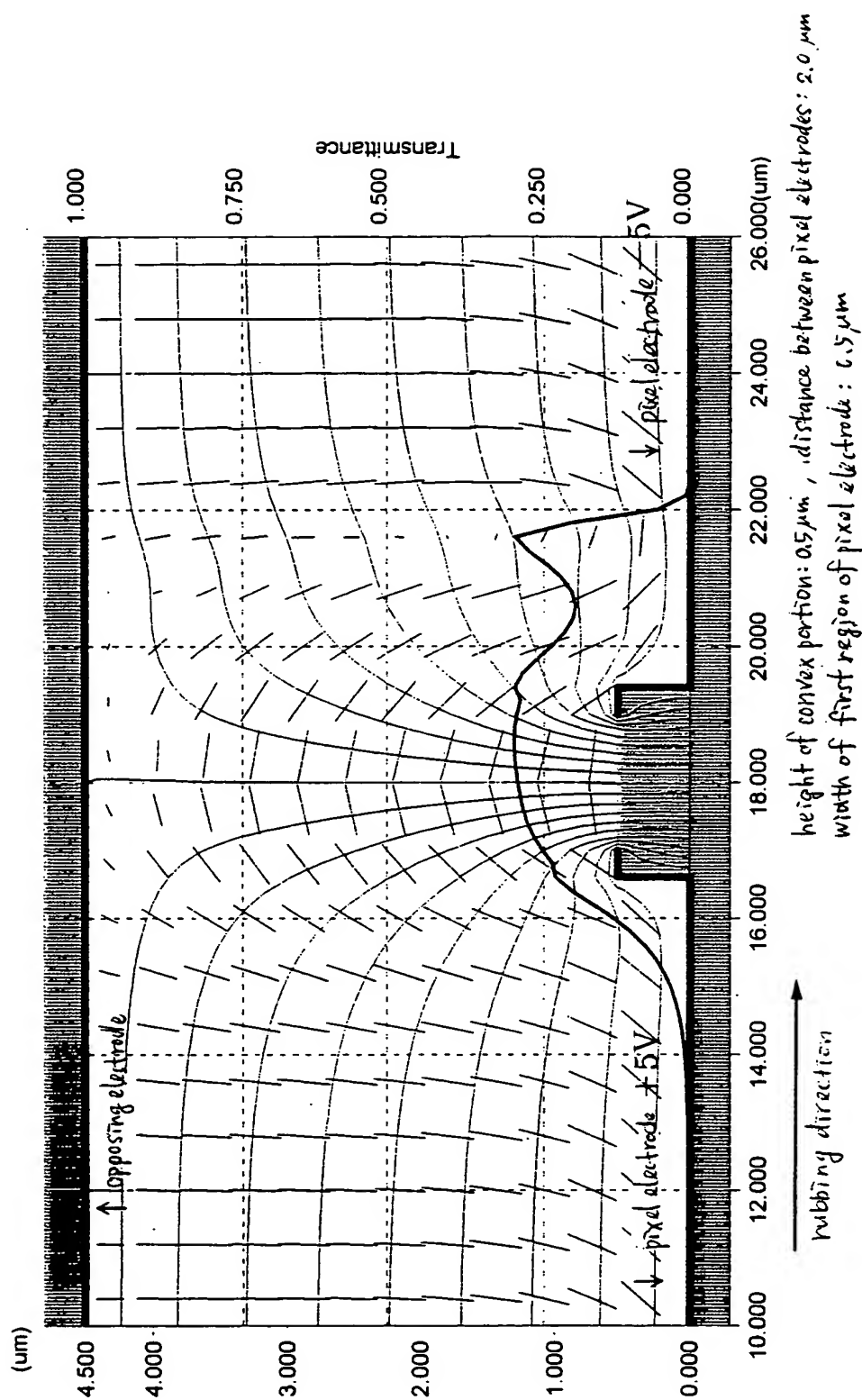


Fig. 14

⊗ rubbing direction

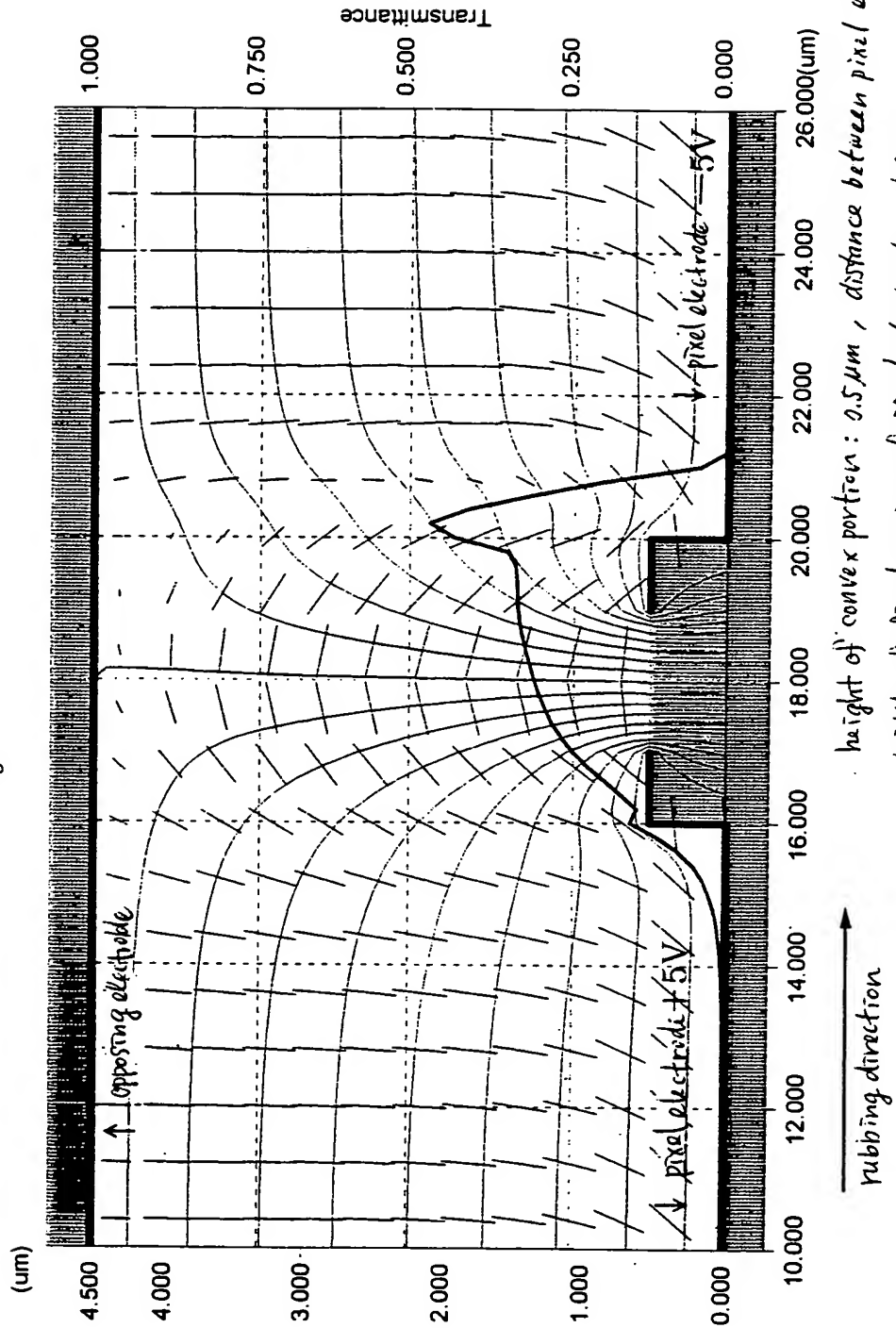


Fig. 15

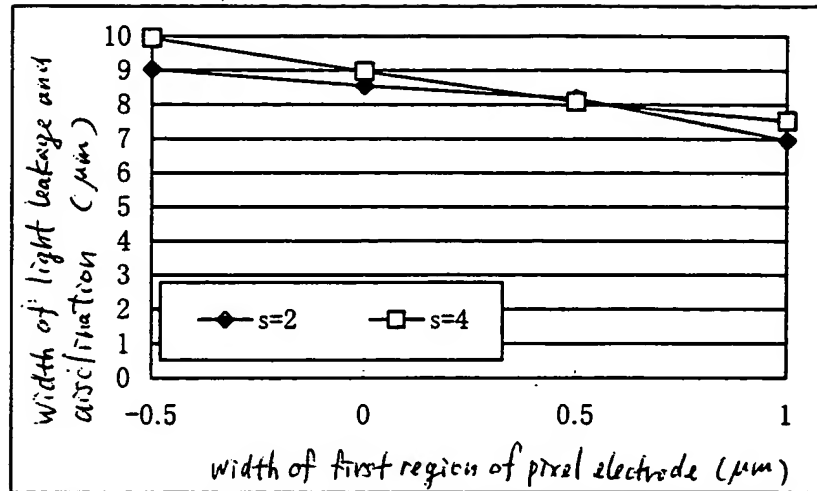


Fig. 16A

The relation between width of first region of pixel electrode and width of disclination and light leakage  
 distance between pixel electrodes : 2.0μm (s=2) , 4.0μm (s=4)

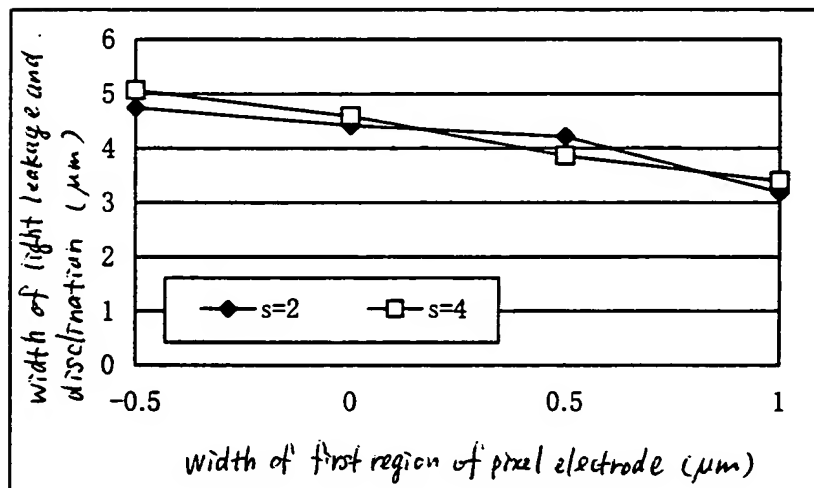


Fig. 16 B

The relation between width of first region of pixel electrode and width of disclination and light leakage  
 distance between pixel electrodes : 2.0μm (s=2) , 4.0μm (s=4)



Fig. 17

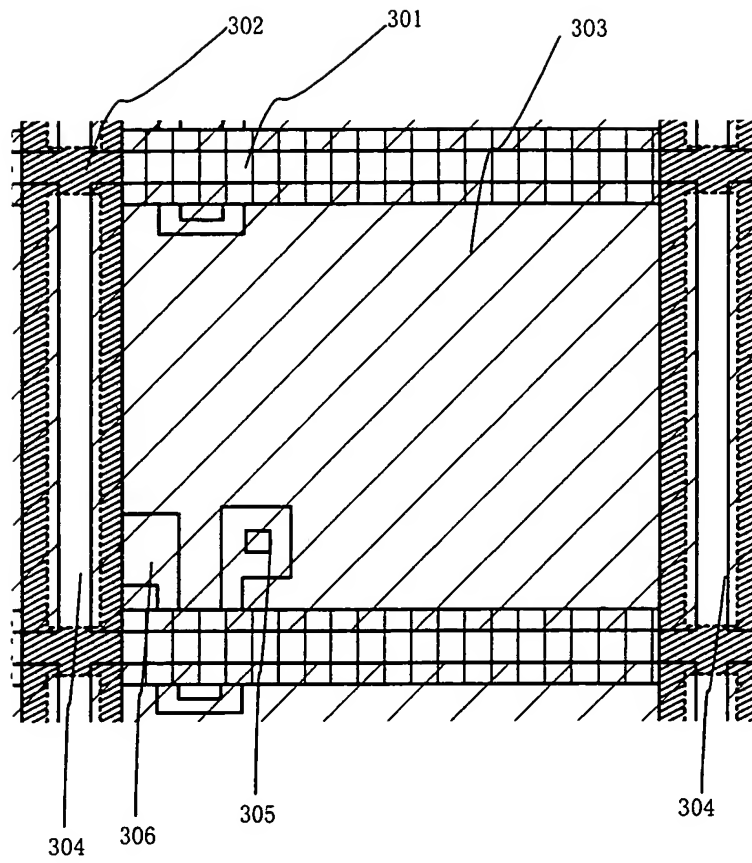


Fig. 18

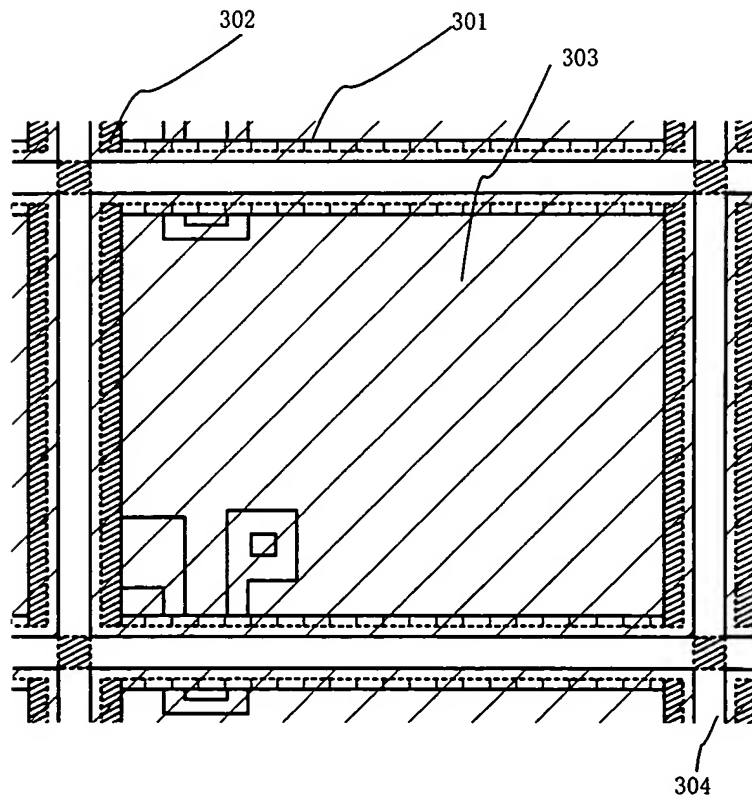


Fig. 19

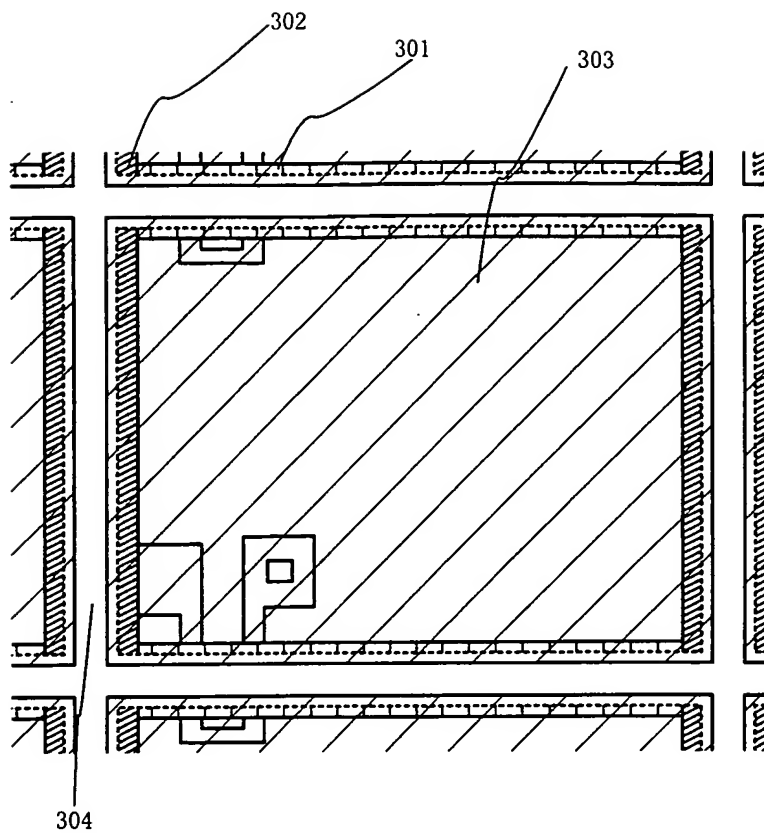
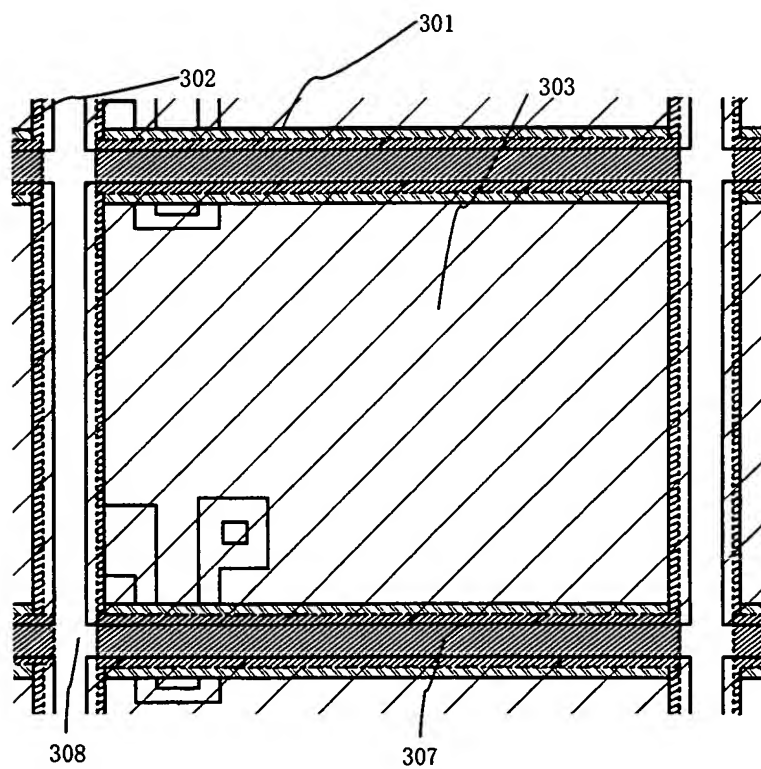


Fig. 20



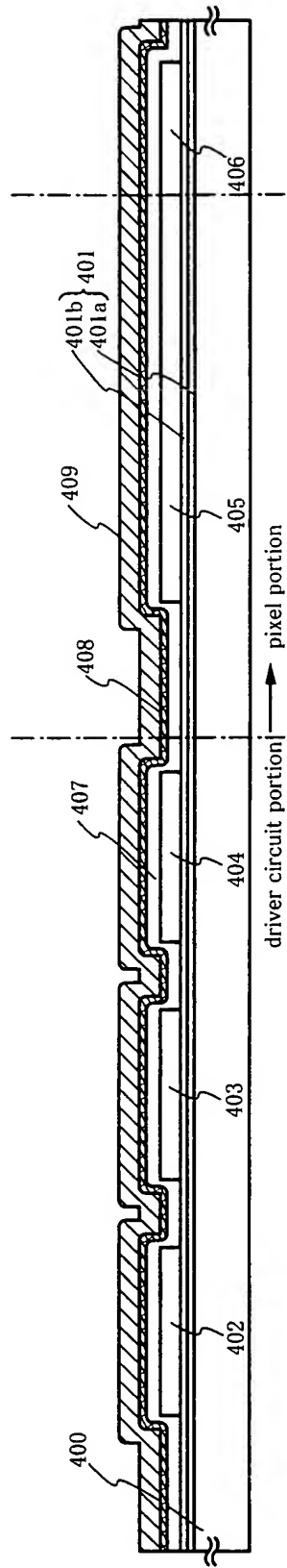


Fig. 21A

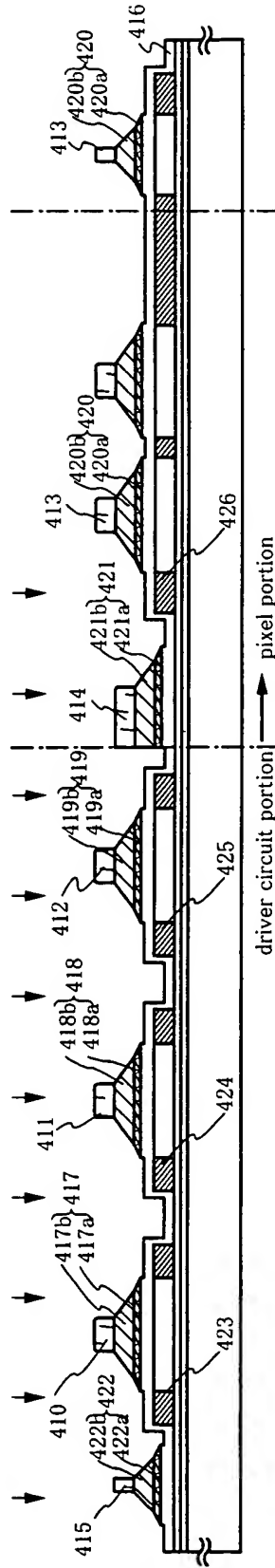


Fig. 21B

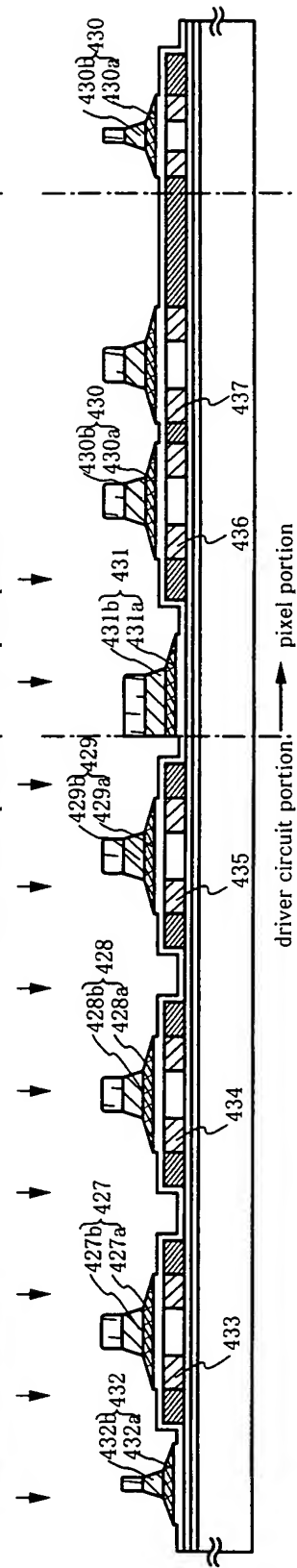


Fig. 21C

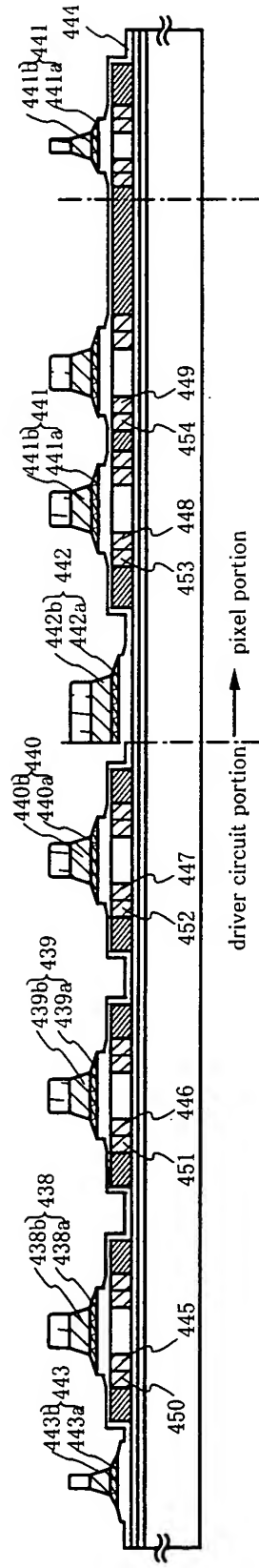


Fig. 22A

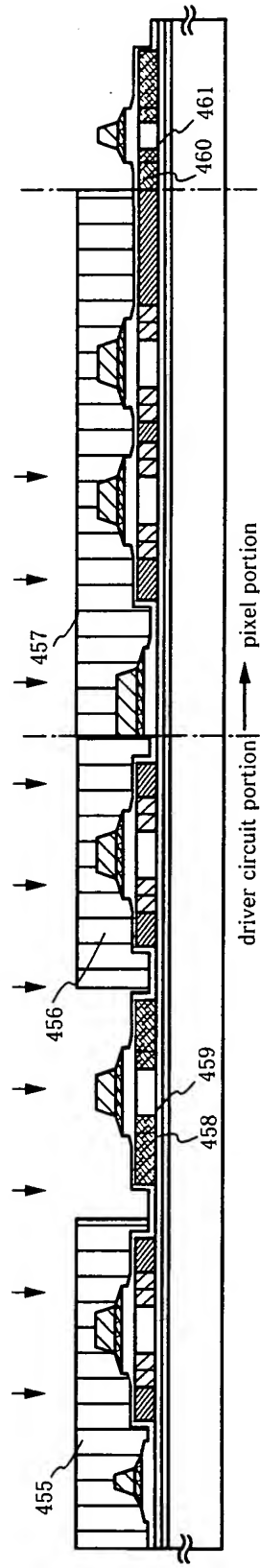


Fig. 22B

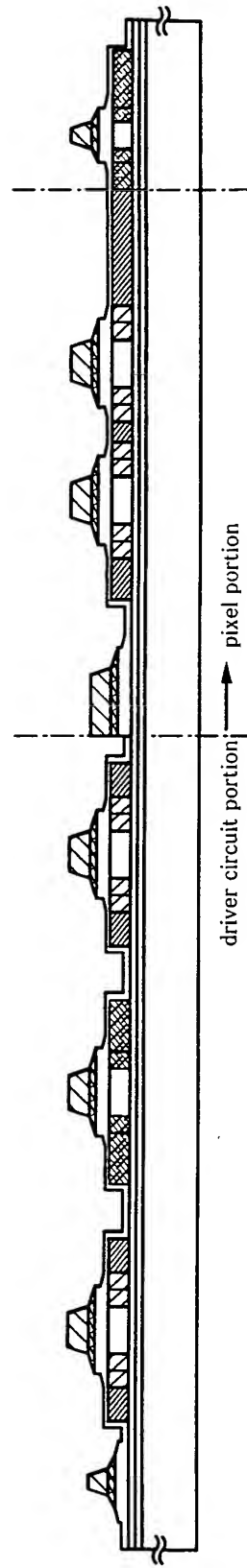


Fig. 22C

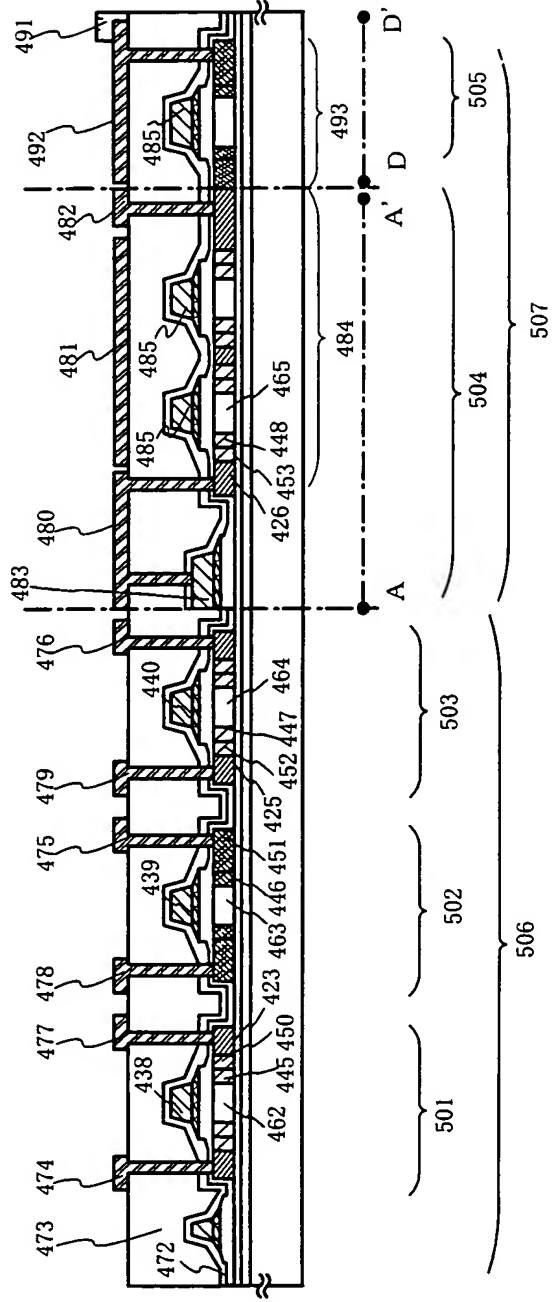


Fig. 23

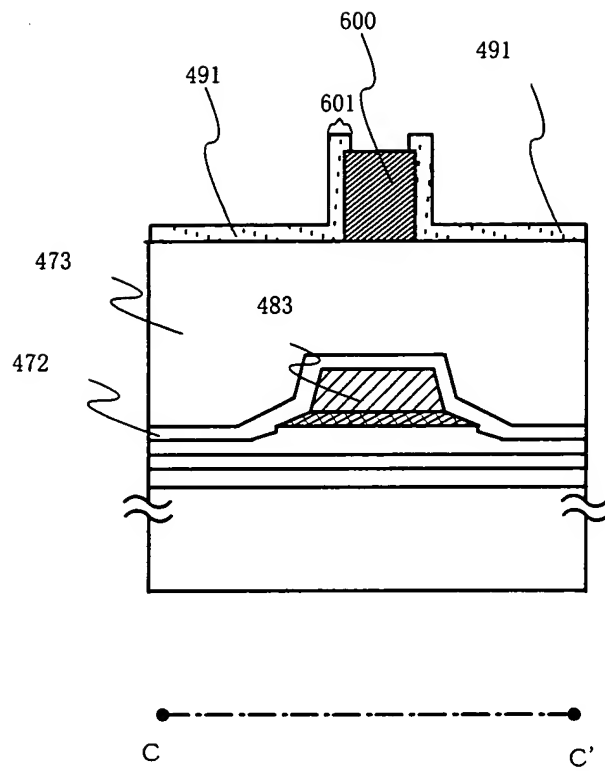


Fig. 24

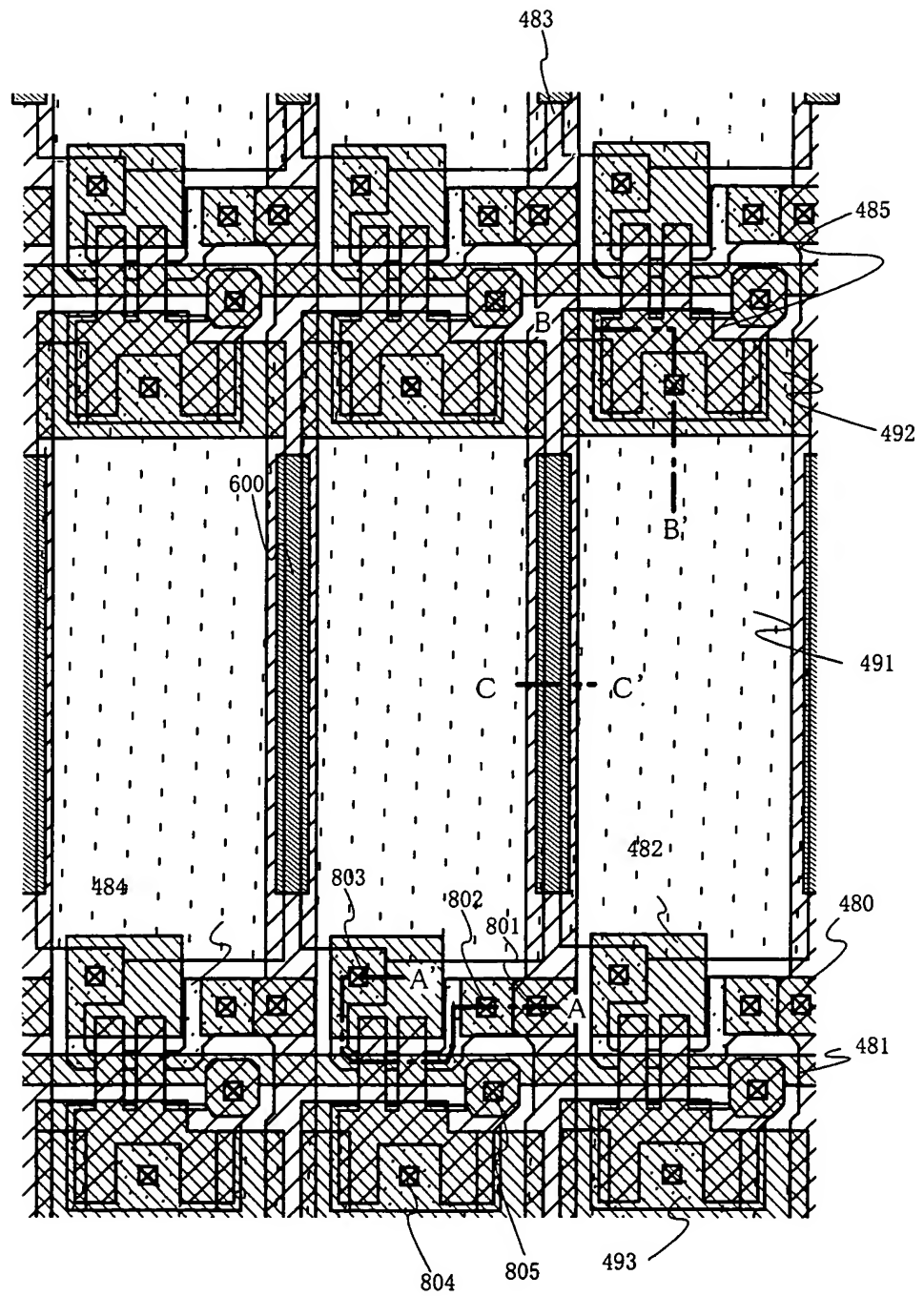


Fig. 25

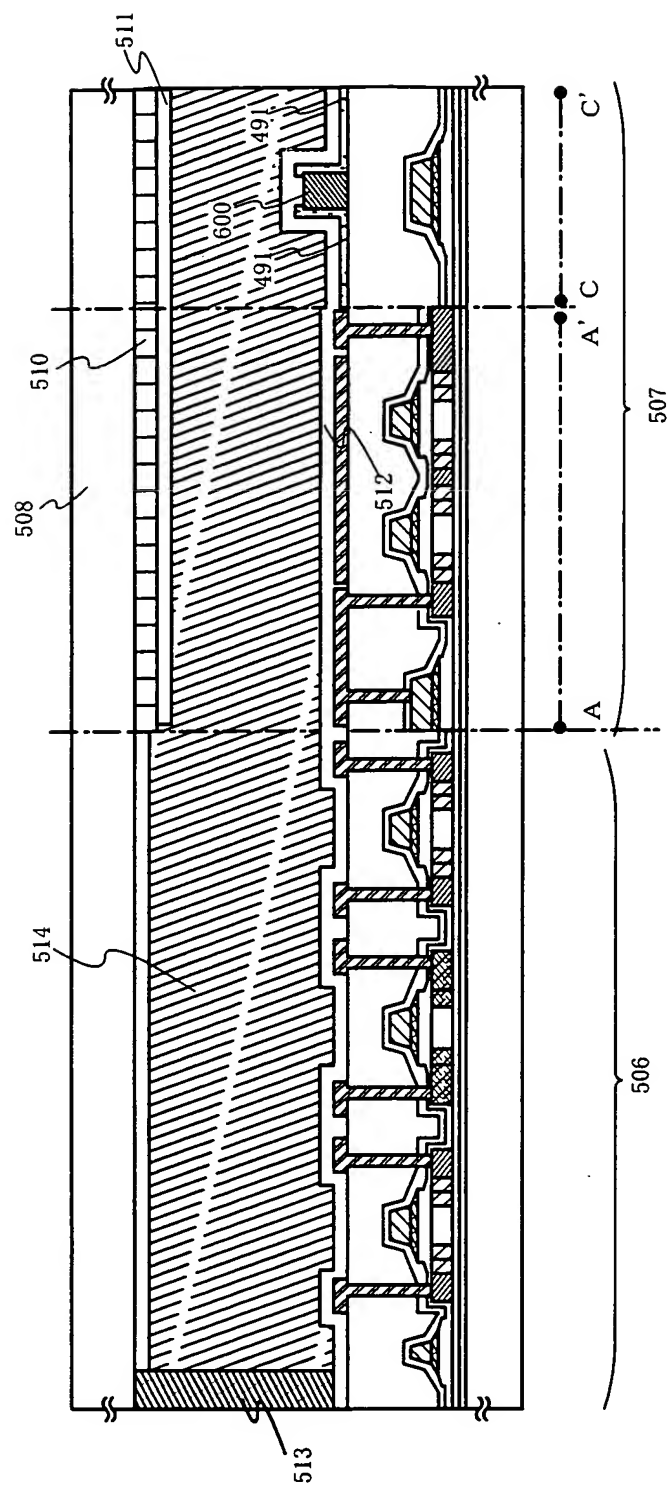


Fig. 26



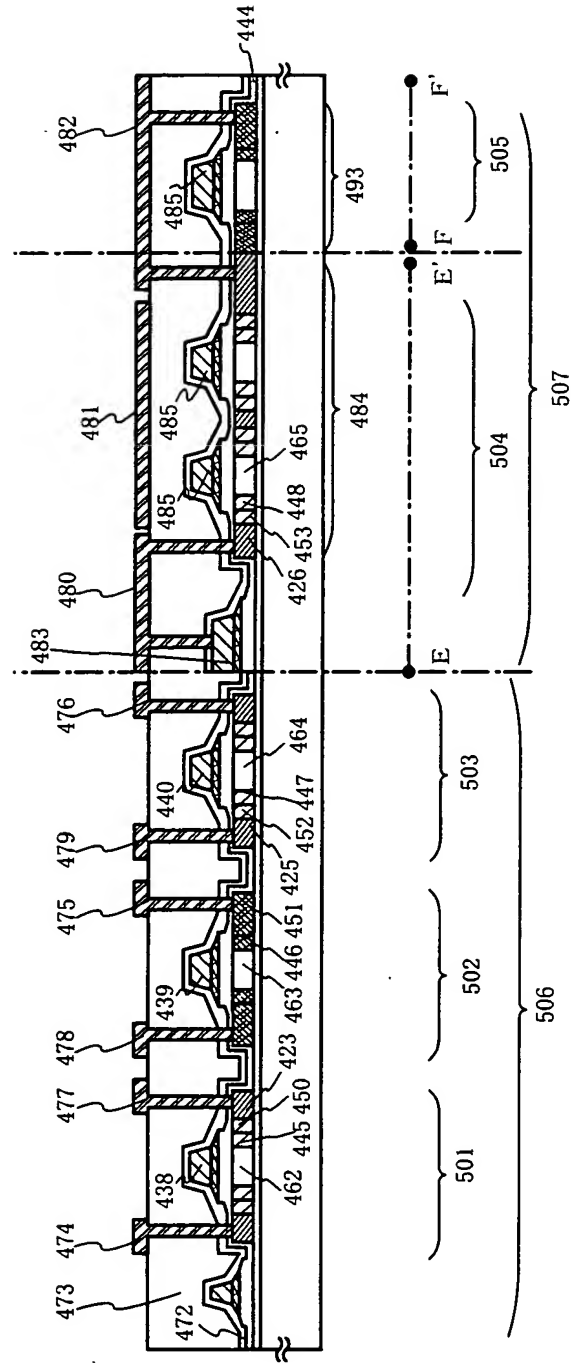


Fig. 27

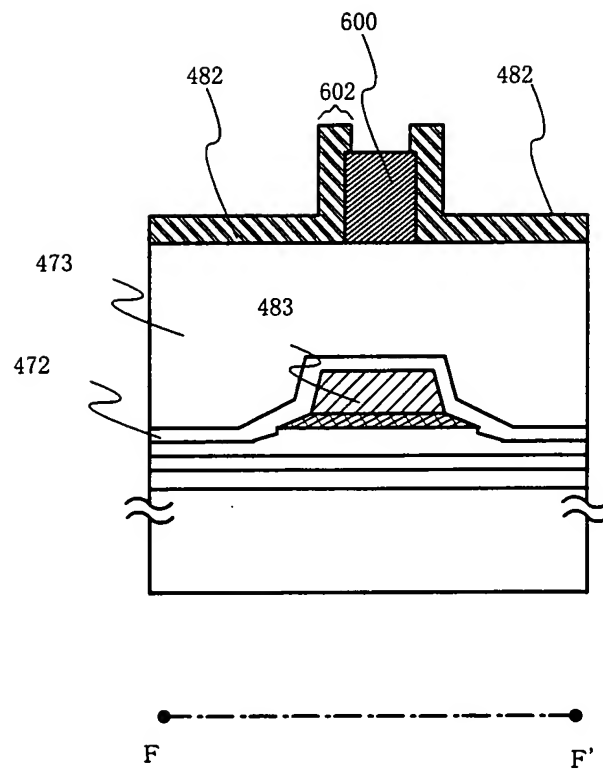


Fig. 28

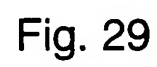


Fig. 29

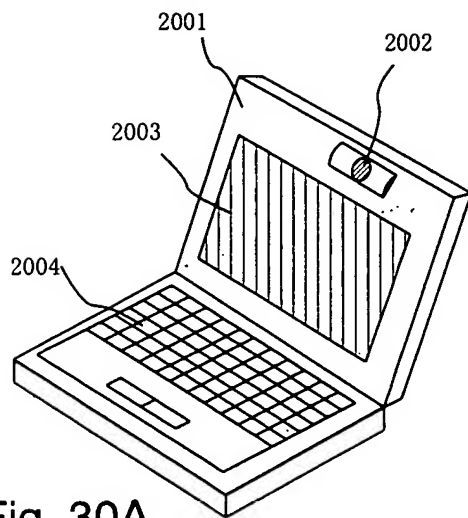


Fig. 30A

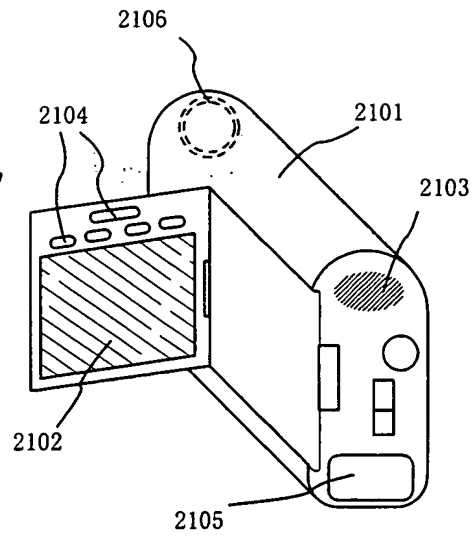


Fig. 30B

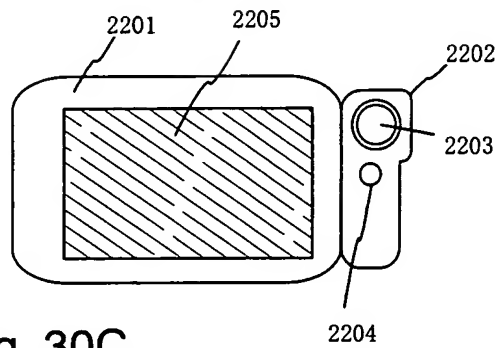


Fig. 30C

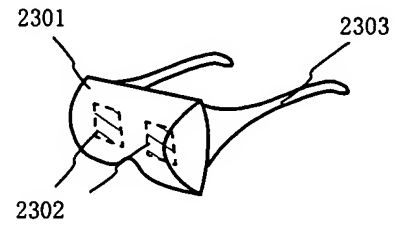


Fig. 30D

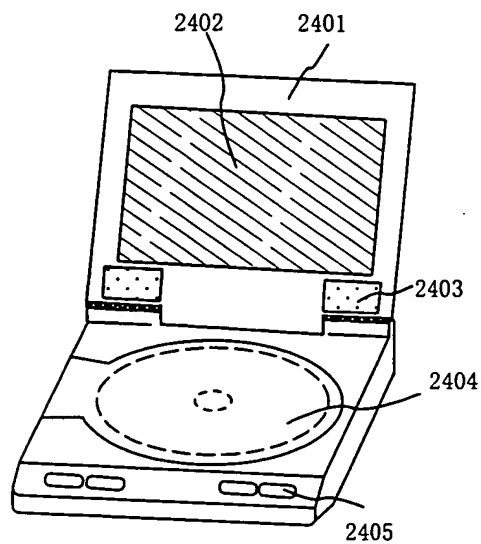


Fig. 30E

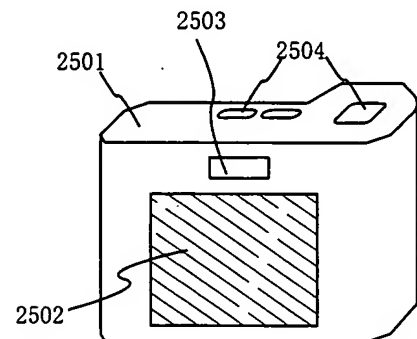


Fig. 30F

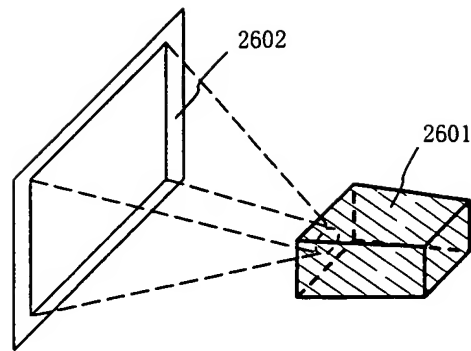


Fig. 31A

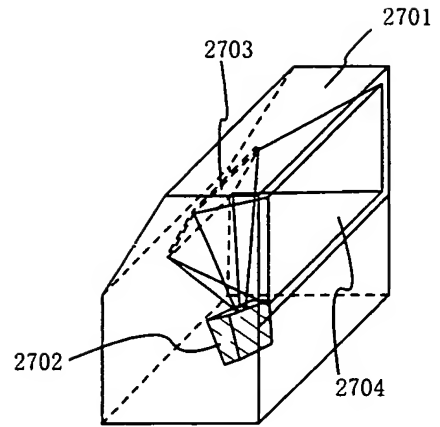


Fig. 31B

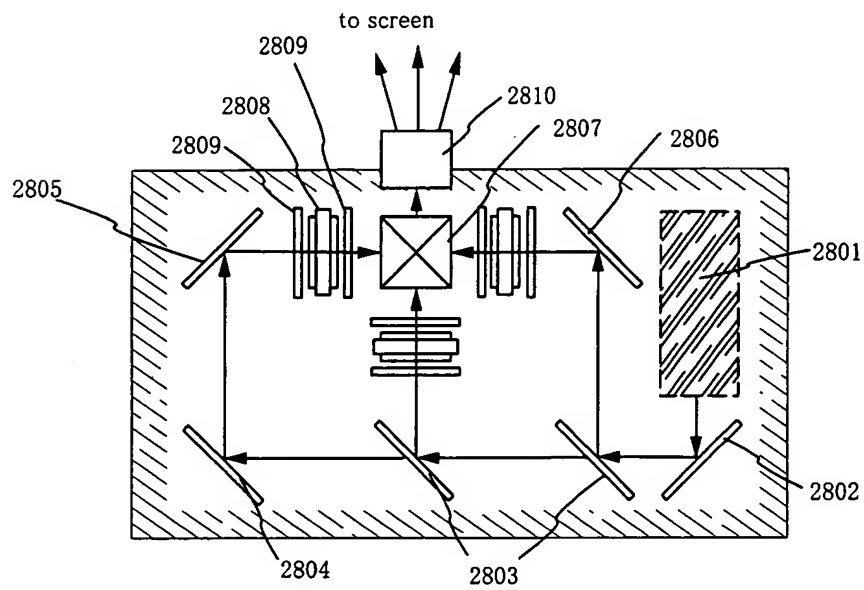


Fig. 31C

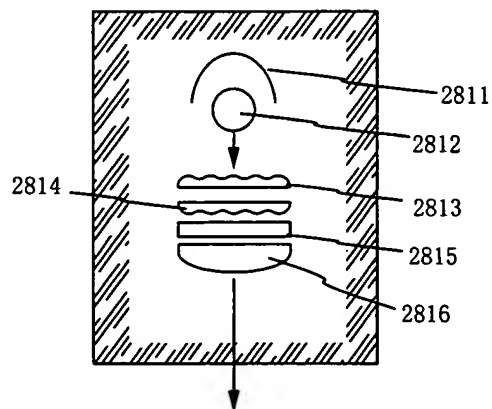


Fig. 31D

Fig. 32A

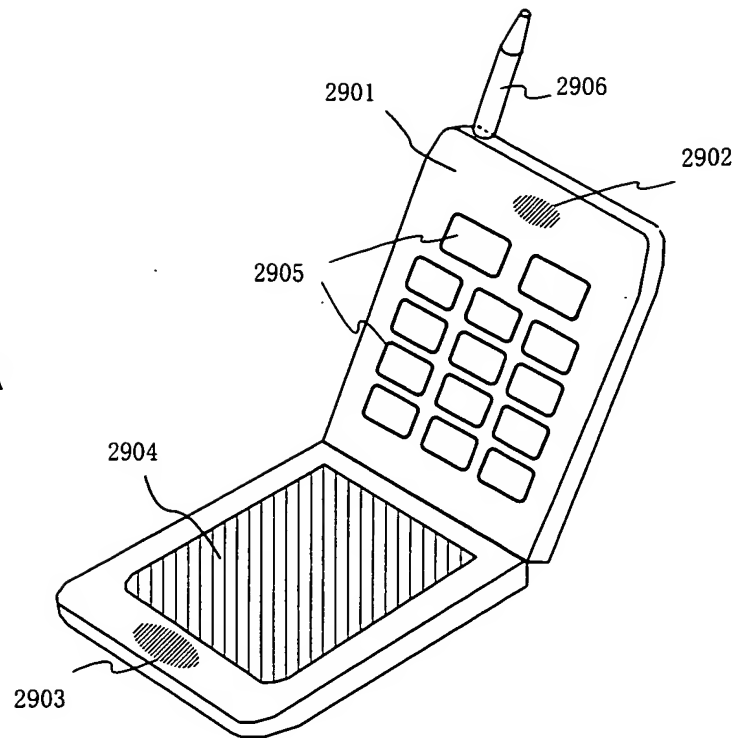


Fig. 32B

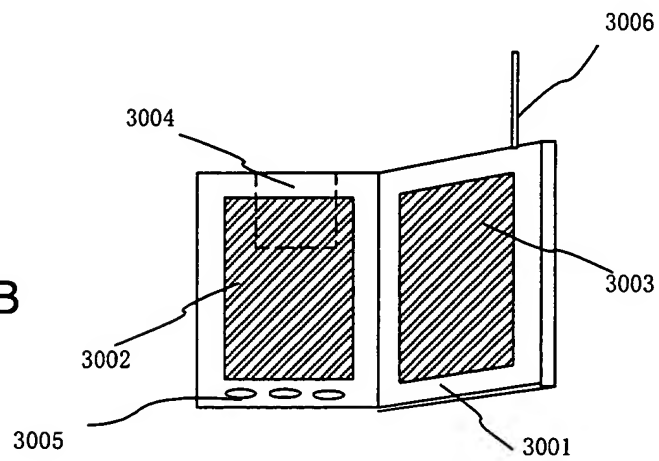


Fig. 32C

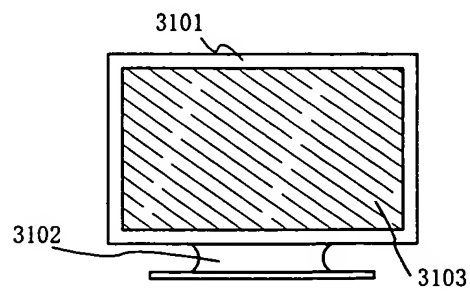


Fig. 33A

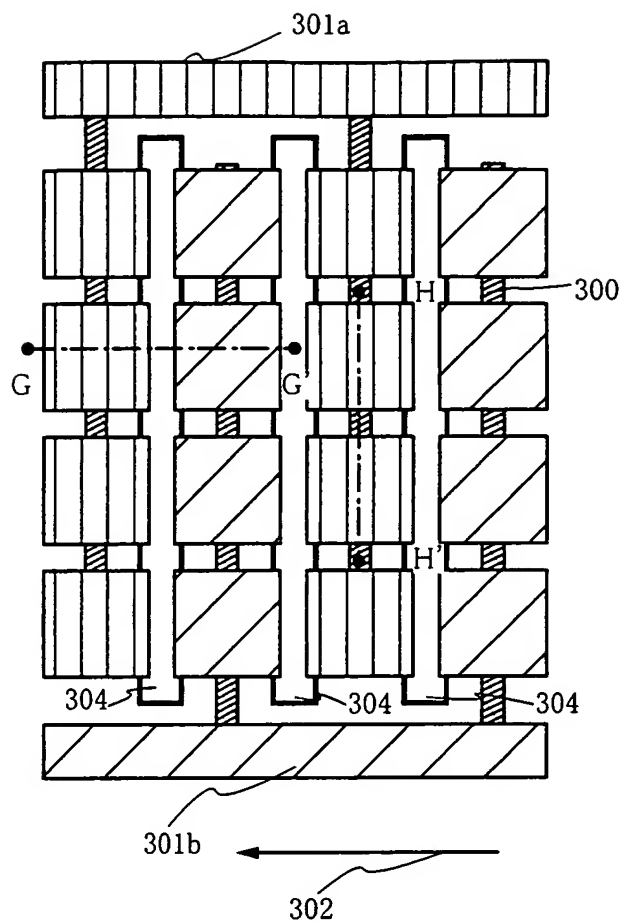


Fig. 33B

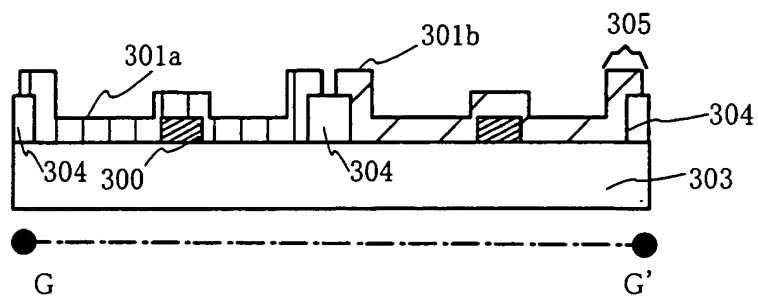
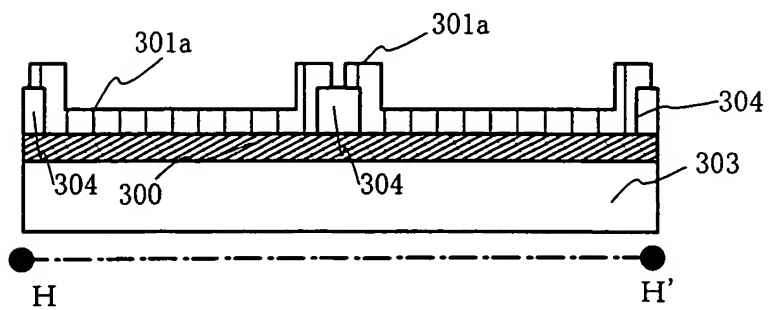
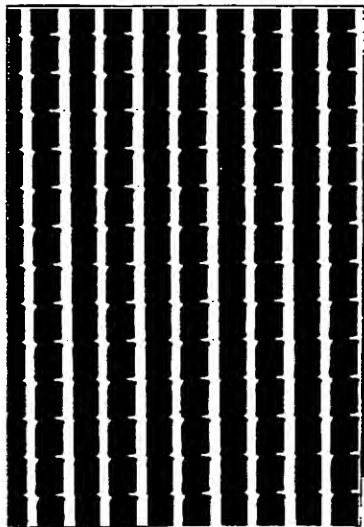


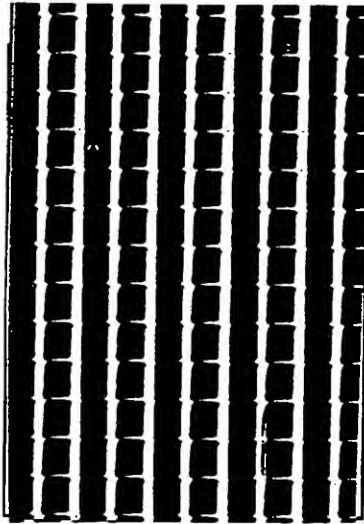
Fig. 33C





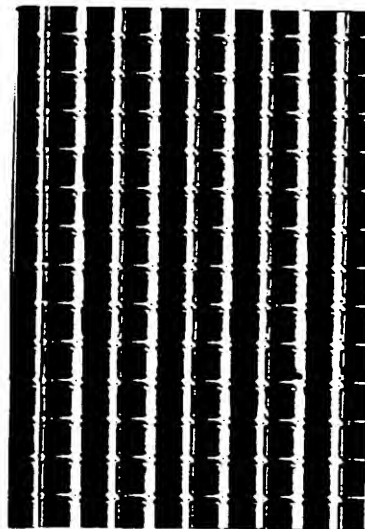
$\sigma = -1.0 \mu\text{m}$

Fig. 34A



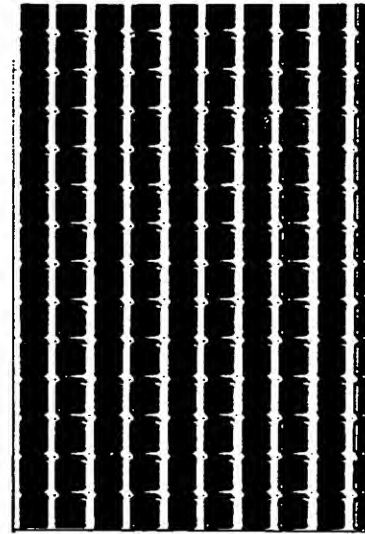
$\sigma = 0 \mu\text{m}$

Fig. 34B



$\sigma = 0.5 \mu\text{m}$

Fig. 34C



$\sigma = 1.0 \mu\text{m}$

Fig. 34D



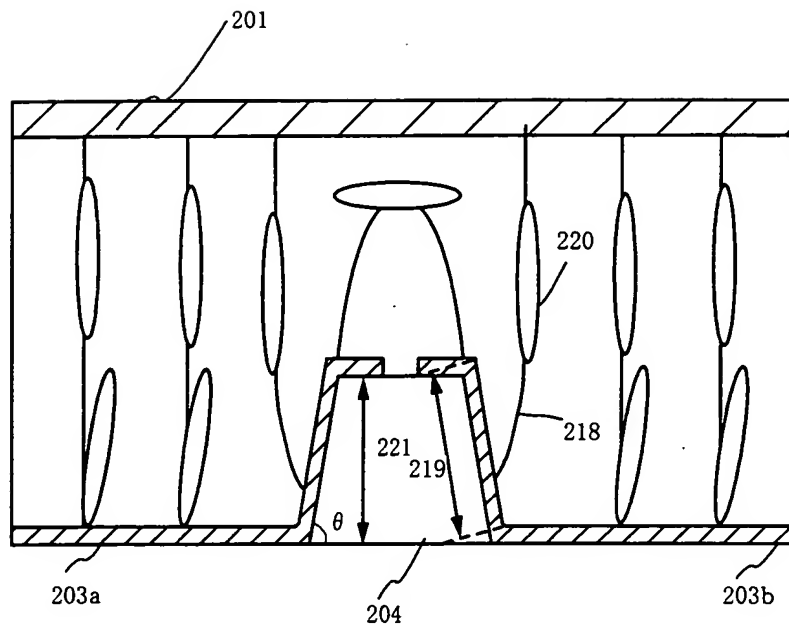
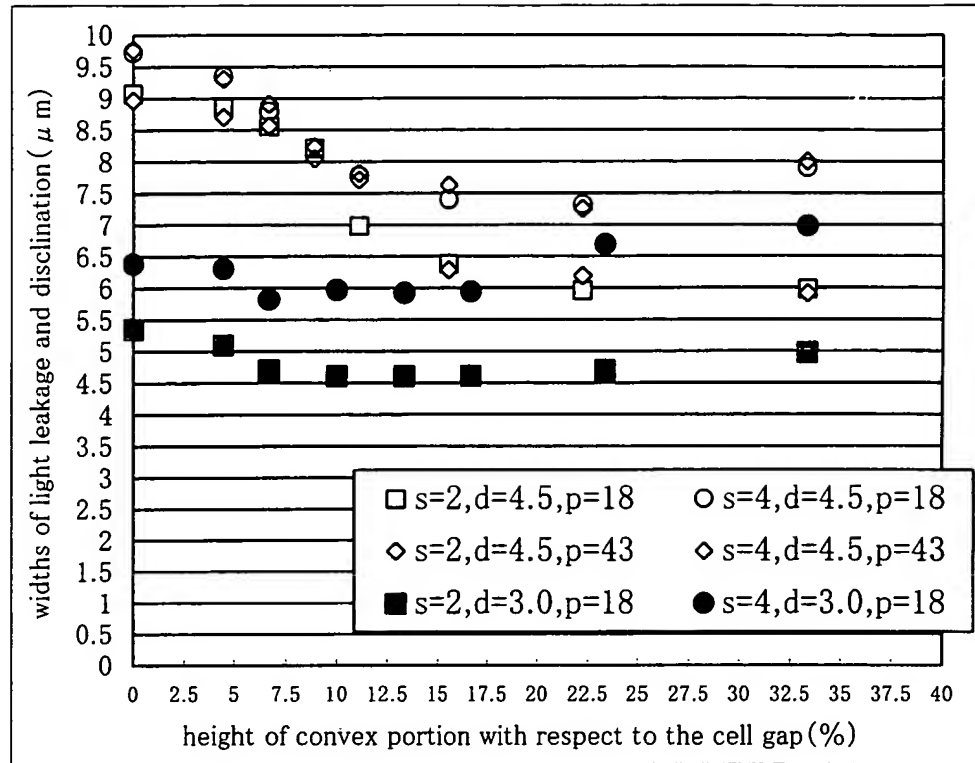


Fig. 35

Fig. 36



$d$ : cell gap ( $\mu m$ )

$s$ : distance between pixel electrodes ( $\mu m$ )

$p$ : pixel pitch ( $\mu m$ )

relationship between widths of light leakage and disclination ( $x$ )  
and height of convex portion ( $h$ )

Fig. 37A

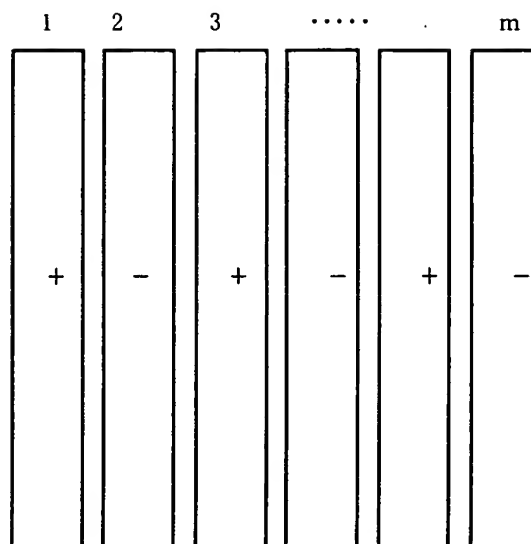


Fig. 37B

